Economic Issues: Toward a Cost-Effective Approach to the Management of Febrile Neutropenia in Japan

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The cost of treating neutropenic patients with unexplained fever is of significant concern in Japan because of the depressed economy and the aging population. Development of a standardized treatment methodology specifically tailored to the situation in Japan will make the treatment more efficient for health care institutions, will allow for improved monitoring of practices and costs, and will result in better patient care. It is essential, however, that the welfare of the patients be the utmost priority—cost savings is not sufficient in the absence of a significant impact on morbidity and mortality.

Several approaches designed to reduce the cost of treating neutropenic patients with unexplained fever have been explored [1–4]. Opportunities to meet this goal have proliferated, because of an expanding armamentarium of oral and intravenous antimicrobials, the emergence of hematopoietic colony-stimulating factors, and data suggesting that empirical therapy can be discontinued early in certain subsets of patients at low risk of developing serious complications [5–7]. Economic issues also have become a significant concern in Japan, because of the depressed economy and the particular situation posed by an aging population.

Several approaches to the treatment of these patients are discussed in this supplement issue of Clinical Infectious Diseases. The applicability in Japan of the guidelines issued by the Infectious Diseases Society of America addressing treatment of fever in patients with neutropenia [8] is a relevant issue. Development of a standardized methodology to treat these patients will make the treatment more efficient for health care institutions, will allow for improved monitoring of practices and costs, and will result in better patient care. Cost-effectiveness studies will then become possible at a national level.

When economic studies are conducted, the welfare of patients must be considered an uppermost priority. The demonstration of statistically significant cost savings is not sufficient, unless a favorable impact on morbidity and mortality is also considered. This is what cost-effectiveness analyses will provide.

Some examples of expensive procedures, including the use of colony-stimulating factors, implemented routinely in Japan without sound evidence provided by appropriate studies, are discussed in this supplement issue. Such procedures should be used according to well-thought-out guidelines, such as those of the American Society of Clinical Oncology [9]. Under some circumstances, such as high-dose chemotherapy with either bone marrow or peripheral blood stem cell support, colony-stimulating factors may be both clinically and economically effective [10]. Establishing guidelines for their use will therefore be extremely useful for clinicians and for the health care community as a whole.

A simplified approach to performing marginal cost-effectiveness analyses is detailed in a report from the Centers for Disease Control and Prevention [11]. It involves a description of the program and of the health outcomes averted and the timing of these events, the rates of health outcomes and the preventable fraction of the health outcomes averted, the costs per unit of the intervention and the costs of the health outcomes prevented, and the side effects incurred. An additional contribution to decision analysis and economic evaluation has been provided by Haddix et al. [12]. Because costs differ from one location to another, the cost-
effectiveness of an intervention in the management of fever and neutropenia should be determined on an individual basis in each health care institution. It is desirable that these types of studies become an integral part of the evaluation procedures implemented in health care centers throughout Japan.

A significant contribution for the decision-making process has come from guidelines established on the basis of discussion by several prominent opinion leaders from hospitals in Japan, with the participation of well-known experts from Europe and the United States, especially invited to provide their insights [13]. It is hoped that the material presented here will further the development of many follow-up activities in Japan, designed to improve our understanding of febrile neutropenia, its management, and empirical treatment.

References